WATER QUALITY

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
WQ-1: Improve harmful algal bloom detection and forecasting in the U.S. and Mexican Gulf States				
36 Month Outcomes: • Improve the current HAB Forecasting System off the Southwest Florida coast to better identify the onset of blooms and better predict the transport of blooms. • Develop a satellite detection, forecasting, and Internet-based notification capability for *K. brevis* off the southern coast of Texas. • Develop a satellite detection and Internet-based notification capability for *K. brevis* off the coast of the Mexican Gulf state of Veracruz.				
Action Blueprint:				
1. Improve the operational HAB Forecasting System off the Southwest Florida coast to better identify the onset of blooms and better predict the transport of blooms.	Florida, NOAA	NASA, NRL		FL will help coordinate the implementation of an improved HABs Forecasting System off the Southwest Florida coast. NOAA will improve its current HAB Forecasting System off the Southwest Florida coast (see: http://www.csc.noaa.gov/crs/habf/) to better identify the onset of blooms and better predict the transport of blooms. (Lead: NOS NCCOS) NASA has a cooperative agreement with the US Naval Research Laboratory to increase the availability of NASA data and NRL remote sensing techniques to the operational HAB forecasting system. Project results will be available to the Alliance.
2. Conduct an interagency workshop to review scientific advances related to red tide in the Gulf of Mexico and identify future priorities for the region.	NOAA		Louisiana	NOAA will convene a workshop to review scientific achievements in understanding red tide and developing methods to mitigate the impacts of red tide on Gulf States (Lead: NOS NCCOS). LA will participate to the extent practicable in a review capacity and will attend workshop as time and funding allows. (Lead: LDEQ)
3. Hold workshops with local, state, and federal expert scientists to train personnel in HAB field sampling and microscopic identification methods and to demonstrate toxin-detection methods.	Florida, EPA	FDA	Alabama, Louisiana, Mississippi	FL will co-lead these workshops. (Lead: Florida HAB Task Force and FDEP CAMA) EPA will co-lead and co-sponsor (i.e., resources and administration) the design, development, and implementation of these workshops. FDA will provide training in field and lab methods for phytoplankton and for toxins. AL will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: ADEM) LA will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: LDEQ) MS will send staff to participate.

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4. Advance technologies for rapid field screening and enhanced real-time remote sensing, platform sensing, and autonomous sensing of HABs.	NOAA		Louisiana, USACE, NASA, EPA	NOAA will test and provide the Alliance and GCOOS with the results of in situ optical HAB detection (off Corpus Christi and along West Florida Shelf (WFS), enhanced nearshore real-time remote sensing systems on WFS, and autonomous sensing to provide early warning of HABs for Texas and Florida (Lead: NOS NCCOS) USACE will contribute information and technologies from existing and future remo sensing platforms installed to analyze releases from Lake Okechobee relative to HAB. NASA will identify and provide results from previously funded and underway projects addressing remote sensing of HABs. EPA will assist in coordinating federal investments in advanced field screening technologies (e.g., NSF funded autonomous sensor development programs underway at the Mote Marine Lab). LA will provide in-kind support as resources will allow.
5. Independently evaluate and compare the multiple methods of HAB detection technologies under development for*K. brevis* against microscopic identification methods.	Florida, EPA		Louisiana, Mississippi	FL will co-lead this evaluation. (Lead: Florida HAB Task Forc EPA, with resources from the EPA Advanced Monitoring Initiative (AMI), will team with project partners to technically support the evaluation of detection methodologies. MS will provide in-kind assistance. LA will provide in-kind support as resources will allow.
6. Conduct studies to determine the public health, natural resources, and socioeconomic impacts of HABs in the Gulf region.	EPA	NOAA	NSF, Louisiana, Mississippi	EPA will work in collaboration with key state and federal partners throughout the region to assess the public health, natural resource, and economic risks and impacts from HABs. The initial study will be concluded within 24 months of the initiation of this plan and updated on a periodic basis as determined by the Alliance. NSF could possibly fund such studies, but the agency's ability to support proposed research and studies is dependent on the submission of proposals and peer review of those proposals. NOAA will fund research to improve the prediction of potential respiratory irritation at specific Gulf of Mexico beaches; to validate ELISA for use as a regulatory alternative for shellfish monitoring and to determine toxin impacts on marine mammals. (Lead: NOS NCCOS) LA will provide in-kind support as resources will allow. MS will provide in-kind assistance.
7. Test and provide the Alliance and GCOOS with the results of an in situ optical early warning HABs system off the coast at Corpus Christi, Texas.	NOAA		EPA	NOAA will test and provide the Alliance and GCOOS with the results of an in situ optical early warning HABs system off the coast at Corpus Christi, Texas (Lead: NOS NCCOS).

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8. Fund research into relationship between anthropogenic activities and planktonic cell counts, environmental conditions that lead to bloom conditions, and testing new HAB detection and tracking technologies for routine use in observation, monitoring and forecasting programs.	Identification of Lead still pending.	NOAA		Through the Ecology and Oceanography of HABs (ECOHAB) and Monitoring and Event Response for HABs (MERHAB) programs, NOAA will conduct targeted Gulf of Mexico research on the detection, causes, and dynamics of HABs, forecasting growth, transport, and toxicity, and transfer new technologies to enhance Gulf of Mexico HAB monitoring and forecasting programs. ECOHAB and MERHAB research projects will predict and ameliorate HAB impacts on higher trophic levels and humans. (Lead: NOS NCCOS)
9. Collaborate with existing Gulf State programs to inform and educate the public about HABs and management actions taken to protect public health; expand educational and outreach methods used to inform the public about HABs and their impacts.	EPA	Florida, USFWS	Louisiana, Mississippi, NSF	EPA will team with additional partners and work with the Alliance Education Network Coordinator to develop and implement a strategic outreach plan for this action. USFWS will assist in educating the public about HABs and their impacts at its coastal National Wildlife Refuges. FL will integrate HAB information into community education programs. (Lead: FDE CAMA) The NSF-funded COSEE Centers located on the Gulf Coast could serve as a point of dissemination for such information (which would be coordinated through the Centers themselves, not through NSF). MS will provide in-kind assistance. LA will provide in-kind support as resources will allow.
10. Implement an operational HAB forecasting capability of the South Texas coast.	NOAA, Texas			NOAA will conduct required research to develop an operational HAB Forecasting System for the western Gulf of Mexico. (Lead: NOS NCCOS) TX will help coordinate the development of an operational HAB forecasting capability off the coast of Texas. (Lead: TPWD)
11. Develop a satellite detection and Internet-based notification capability for *K. brevis* off the coast of the Mexican Gulf state of Veracruz.	EPA	NASA, NRL, NOAA, Papaloapan River Basin Development Council (Veracruz)	GCOOS, Gulf of Mexico States Accord, State Department	EPA, with resources from the EPA Advanced Monitoring Initiative (AMI), will team with project partners including the Gulf of Mexico States Accord's Veracruz representatives to develop a satellite detection and Internet-based notification capability off the coast of Veracruz, Mexico. EPA will work in collaboration with the GCOOS Regional Association and State Department to help integrate and standardize the efforts undertaken in Veracruz with those utililized in the southwest Texas and South Florida components of Action WQ-1. State Department will facilitate, as appropriate, contacts with Mexican federal and state officials to explore their interest in participating in project activities, according to guidance from the Alliance.
12. Install meteorological stations in the near coastal zone where required to forecast surface currents.	EPA	NOAA	Lousisiana, Mississippi	EPA, with resources from the EPA Advanced Monitoring Initiative (AMI), will tea with project partners including the Gulf of Mexico States Accord's Veracruz representatives to support the installation and pilot operation of 2 pilot meterological stations off the coast of Veracruz, Mexico. NOAA will provide meteorological observations from National Water Level Observation Network stations that have meteorological sensors.(Lead: NOS CO-OPS) MS will provide in-kind assistance. LA will coordinate as resources will allow.

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WQ-2: Improve beach water quality management				
36-month outcomes: • Conduct a peer-reviewed field evaluation of current bacterial source tracking capabilities in an estuarine recreational area, and select two methodologies for intensive field testing/validation. • Implement pilot testing of these two methods in five Gulf of Mexico estuaries with varying environmental conditions (preferably one location in each Gulf state).				
Action Blueprint:				
1. Conduct a "State of the Gulf" workshop on pathogen indicators in recreational marine waters, epidemiological correlations, and bacterial source tracking research, wit an endpoint of selecting the site and designing the stud and the parameters for evaluation.	EPA	USGS, NOAA, Mississippi	Alabama, Louisiana, FDA, NSF	EPA, via an existing Congressionally authorized and appropriated agreement, with the University of Southern Mississippi to assist in such actions, will design and implement this workshop. Additionally, EPA, through its oversight regions in the Gulf (Regions 4 & 6), will provide policy advice and technical assistance to these actions. NOAA will participate in the marine pathogen workshop, if asked by the Alliance (Lead: NOS NCCOS) NOAA will contribute to the Alliance the results of an active research program in BST, specifically tracking fecal coliform to human, wildlife or domestic animal sources. (Lead: NOS NCCOS) USGS will provide experience in BST methods and in forecasting beach contamination. MS will provide in-kind support and financial assistance. NSF will send a representative to the workshop. AL will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: ADEM) LA will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. Indicator methods are being developed by FDA and FDA will participate in this workshop.
2. Conduct a comprehensive field evaluation of current bacterial source tracking capabilities.	EPA	Mississippi	Alabama, Louisiana, FDA	EPA will provide technical assistance to this action. MS will provide in-kind assistance. Alabama will collect samples when stations are consistent with other program sampling activities. (Lead: ADEM) Louisiana will participate as resources will allow. FDA will contribute results of recently-started field studies using traditional indicators, male-specific bacteriophage, and direct measure of norovirus.

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3. Conduct a workshop to evaluate the field evaluation results and select two methods for use in the pilot studies; select the pilot study areas.	EPA	Mississippi	Alabama, Louisiana, USGS, FDA	EPA, via an existing agreement with the University of Southern Mississippi to assist in such actions, will design and implement this workshop. Additionally, EPA, through its oversight regions in the Gulf (Regions 4 & 6), will provide policy advice and technical assistance to these actions. MS will provide in-kind assistance. USGS will provide expertise in study design and analytical methods. Alabama will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: ADEM) LA will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. FDA will participate in this workshop.
4. Pilot test the two preferred bacterial source tracking methodologies in five Gulf estuaries (with varying environmental conditions).	EPA	Mississippi	Louisiana	EPA will provide technical assistance to this action. MS will support pilot testing in an MS estuary. LA will provide in-kind support as resources will allow.
5. Evaluate bacterial sources responsible for the contamination of shellfish growing waters in each of the five pilots.	EPA	FDA	Louisiana	EPA will provide technical assistance to this action. FDA will provide results of studies on environmental fates of pathogens and indicators, and can collaborate on traceback studies. LA will participate as resources will allow.
6. Conduct a final workshop to evaluate the results of pilot studies and prepare a final report.	EPA	Mississippi	Louisiana, USGS, FDA	EPA, via an existing agreement with the University of Southern Mississippi to assist in such actions, will design and implement this workshop. Additionally, EPA, through its oversight regions in the Gulf (Regions 4 & 6), will provide technical assistance to these actions. MS will provide in-kind support and financial assistance. USGS will provide expertise in review of study results and manuscript peer review. FDA will participate in this workshop. LA will participate and attend workhop as resources will allow.
7. Equip state laboratories and train state and local personnel in specific bacterial source tracking methods	EPA	NOAA	Louisiana, Mississippi	EPA will work with state partners to assess the costs necessary to equip their laboratories and train personnel to conduct the selected BST methods. EPA will also assist the states in preparing and supporting financing strategies for the effective implementation of these effects Gulf-wide. At the specific request of the Gulf States, NOAA will train state personnel in specific BST methods. (Lead: NOS NCCOS) MS will provide in-kind assistance. LA will participate as resources will allow.
WQ-3: Improve government efficiency in water quality monitoring				

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ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
36-Month Outcome: Implement a regional pilot effor to coordinate and standardize state and federal water quality data collection activities in the Gulf region for one or more nutrient parameter(s) and/or one or more pathogens.				
Action Blueprint:				
1. Host an annual Gulf of Mexico Forum for Environmental Monitoring to promote coordination of water quality monitoring by state, local, and federal agencies.	EPA	USGS, USFWS, Mississippi	Alabama, Louisiana, NOAA, MMS	EPA will co-lead and co-sponsor (i.e., resources and administration) the design, development, and implementation of this regional forum. USGS and USFWS will assist in planning and goal setting. MS will provide in-kind support and will participate. NOAA will participate in the environmental monitoring forum, if asked by the Alliance (Lead: NOS NCCOS) MMS will utilize expertise to ensure efforts are consistent and compatible with other ongoing efforts. AL will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow. (Lead: ADEM) LA will participate to the extent practicable in a review capacity and will attend workshops when time and funding allow.
2. Comprehensively survey state, local, and federal agencies for types of water quality data being collected methods of collection, analytical methods, quality assurance protocols, proprietary restrictions, and database platforms.	Identification of Lead still pending.	NOAA, USGS, USFWS, Mississippi	Louisiana, USACE, MMS	NOAA will provide data about NERRS System-wide monitoring program including rationale for protocols and quality assurance (Lead:NOS OCRM, NOS NERRS) USGS will contribute significant experience in hydrological monitoring to help coordinate standards and analytical methods. USFWS will contribute environmental contaminants expertise to help coordinate standards and analytical methods. MS will provide in-kind support. USACE can respond to the survey with information on the WQ data collected as part of its studies and projects. MMS will utilize expertise to ensure efforts are consistent and compatible with other ongoing efforts. LA will provide in-kind support as resources will allow.

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3. Develop accountability tools and accreditation standards for laboratories performing analyses included in Gulf-wide monitoring databases.	Identification of Lead still pending.	USGS, Mississippi	Louisiana, USACE, MMS, USFWS, EPA, NOAA	USGS will help oversee development of quality assurance and quality control protocols. MS will provide in-kind support. USACE will share recently prepared guidance for quality assurance of water quality laboratory testing with the Gulf team for this action. MMS will utilize expertise to ensure efforts are consistent and compatible with other ongoing efforts. USFWS will collaborate with the states and other federal agencies. EPA will collaboratively provide policy and technical assistance to this action. NOAA will provide NERR System-wide Monitoring Program standards and protocols for water quality data collection, analysis, and quality control for use as a model (Lead: NOS NERRS) LA will provide in-kind support as resources will allow.
4. Facilitate the selection of a pilot parameter for monitoring coordination and standardization by state ar federal water quality agencies and GCOOS (leverage possible linkage to National Water Quality Monitoring Council regional pilot activities).	Identification of Lead still pending.	Mississippi	Louisiana, GCOOS, National Water Quality Monitoring Council, NOAA, USGS, EPA	MS will provide in-kind support. NOAA can lend expertise on standards and protocols for collection, analysis and quality control. The National Monitoring Network design is almost completed and should include operational sites chosen in consultation with Regional Associations, such as GCOOS. (Lead: NOS NERRS with NCCOS participation) USGS will coordinate with other federal, state, and local participants. EPA will collaboratively provide policy and technical assistance to this action. LA will provide in-kind support as resources will allow.

RESTORATION

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
R-1: Streamline coastal restoration and conservation efforts				
36 Month oucomes: • Establish a Gulf of Mexico Alliance Regional Restoration Coordination Team. • Through the Restoration Coordination Team, hold a series of meetings between federal agencies and Gulf States to review existing regulatory, funding, and policy frameworks, and identify mechanisms that help facilitate or impede wetland conservation and restoration efforts. • Hold a workshop on importance of freshwater inflows. • Fund conservation and restoration projects more efficiently through extension of the Corporate Wetlands Restoration Partnership and coordination of federal grant cycles. • Develop a Gulf Regional Sediment Management Master Plan to enable more effective use of dredged material.				
Action Blueprint:				
1. Establish a Gulf of Mexico Alliance Regional Restoration Coordination Team, including state, local, and federal representation.	Louisiana		NOAA, Mississippi	LA will coordinate with states, federal agencies, and local partners to form Regional Restoration Coordination Team NOAA will serve as an advisor to the Regional Restoration Coordination Team, if asked by the Alliance. (Lead: EGT Habitat Program) MS will provide in-kind support.

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2. Host workshops of the Gulf of Mexico Alliance Regional Restoration Coordination Team to determine Gulf-wide issues, inventory current restoration successes, and identify priority sites for restoration.	Gulf of Mexico Foundation, Louisiana	NOAA, EPA, USGS, USFWS, The Nature Conservancy	USACE, Mississippi, Texas, Alabama, Florida, The Nature Conservancy	GOMF, as administrator of the Gulf of Mexico Community Based Restoratio (CRP) Partnership with NOAA, will apply $50K of funding from the 2001 partnership award to plan and host a workshop to assess habitat restoration need This workshop will meet needs of the CRP and the Regional Restoration Coordination Team. GOMF will cover the cost of the workshop, including limited invitational travel to ensure attendance of appropriate Team members, and document and distribute workshop outcomes in a Proceedings. Conceptual ideas for location, timing and agenda remain in development, although (1) Mississippi is proposed as the workshop location, and (2) May or June is the proposed timeframe. LA will coordinate with the GOMF on the 1st Regional Restoration Coordination Team workshop, and host or assist on subsequent workshops, with the support of other state and federal agencies. NOAA will participate in Regional Restoration Coordination Team workshops, if asked by the Alliance (Lead: EGT Habitat Program, NOAA CSC) USFWS and USGS will assist in planning and conducting the workshops. EPA will contribute resource assistance and administrative support for this workshop. Additionally, EPA's representative to the CWPPRA Task Force will submit a proposal through the program's annual solicitation process to potentially help further support this action. USACE staff will participate in workshops to hear state priority needs, contribute information on experiences, and suggest restoration opportunities in which it can participate. A USACE study in Mississippi could be a good match for one of these workshops.
3. Fund and host a Gulf of Mexico interstate workshop on the importance of freshwater inflows to maintaining estuarine health including wetlands.	USGS	EPA, Florida	NOAA, USACE, NSF, USFWS, Louisiana, Mississippi	USGS and USFWS will assist in planning and hosting the workshop. EPA will contribute resource assistance and administrative support for this workshop. FL work with partners to host freshwater in-flow workshop. (Lead: FDEP CAMA) NOAA will consult with State of Texas CZM program (which has funded considerable research on this issue) to ensure that they can participate in this workshop (Lead NOS OCRM in consultation with NMFS Science Centers, NCCOS and NERRS) USACE staff will participate in workshops. NSF will send representation to workshop. MS will provide in-kind support. LA will provide in-kind support.

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4. Using the Gulf of Mexico Alliance Regional Restoration Coordination Team, resolve federal/state environmental compliance issues that affect habitat restoration and conservation efforts, such as essential fish habitat (EFH), Endangered Species Act requirements, and Clean Water Act (e.g., Total Maximum Daily Loads).	Identification of Lead still pending	EPA, USACE, NOAA, USFWS	Louisiana, Mississippi, NPS	EPA will provide policy and technical support for the Total Maximum Daily Load (TMDL) component of this action. USACE will participate in meeting discussions to help resolve conflicts (suggest using applicable existing multi-agency regional forums when possible). NOAA will participate in discussions with regard to EFH and other fisheries issues. (Lead: NMFS SER HP) USFWS and NPS will work cooperatively with other federal agencies to indentify and expedite the resolution of environmental compliance issues that affect wetlands restoration projects. LA will provide in-kind support. MS will provide in-kind support.
5. Devise a strategy to streamline certain federal permitting requirements for wetland restoration.	USACE, EPA	USFWS	Louisiana, Mississippi, NPS	USACE will hold meetings with the states to clarify the permitting requirement issues and develop a strategy for addressing them. Level of effort will be funding dependent. EPA will provide policy and technical support to help ensure consistent regulations, relative to EPA's regulatory programs. USFWS and NPS will collaborate with other Federal agencies in developing a strategy to streamline permitting requirements for Coastal Wetlands Restoration Grants and other wetlands restoration programs that it administers. MS will provide in-kind support. LA will provide in-kind support.
6. Identify administrative and legal processes in granting agencies that may either facilitate or impede wetland restoration and conservation project planning and implementation.	USFWS	MMS, EPA	Louisiana, Mississippi, NOAA, USACE, USFWS	USFWS will work with the states to identify administrative and legal processes that are impeding wetland restoration project planning and implementation. MMS administers the Coastal Impact Assistance Program (CIAP) and will direct CIAP funds to projects such as coastal restoration and protection, mitigation of damage to wildlife, or mitigation of OCS activities through onshore infrastructure projects. EPA will actively participate, with our key granting partners (i.e., NOAA, USDA, USFWS, MMS (re: Coastal Impact Assistance Program (CIAP)), in the process review outlined in this action. NOAA will contribute information on CZM funding policies, processes, and schedules to assist in this effort. (NOS OCRM, EGT Habitat Program) USACE (which is not a granting agency) will consider the relationship of federal grants to USACE restoration authorities and the potential for the states to use these funds as a cost-share match. Also, the work done using grants may have Section 404 Regulatory Program requirements. MS will provide in-kind support. LA will provide in-kind support.

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7. Further develop public-private partnerships, such as the Corporate Wetlands Restoration Partnership, and incentives that support landowner conservation to increase funding opportunities for restoration. Ensure state and local governments are well-informed about partnership and incentive programs.	USFWS, EPA	NOAA	Louisiana, Mississippi, Coastal America, USACE	USFWS will assist the States in integrating the use of grant and partnership programs (e.g., Coastal Wetlands Conservation Grant Program, Coastal America Program, Partners for Fish and Wildlife Program, National Fish Habitat Initiative, Southeast Aquatic Resources Partnership). EPA, as co-lead of the Gulf of Mexico Regional Implementation Team of Coastal America, will work directly with the Gulf of Mexico Program's Business Council in an effort to advance the implementation of the Corporate Wetlands Restoration Partnership toward the goal of establishing operational chapters in all 5 Gulf States within 36 months. The NOAA Restoration Center/Gulf of Mexico Foundation Partnership (GEMS Partnership) currently funds habitat restoration projects throughout the five Gulf States and includes state resource managers from each state as Steering Committee members. The Gulf of Mexico Foundation has agreed to administer additional funds, if they become available, using the same project selection infrastructure. The project selection comittee includes equal representation from each Gulf State, FWS, NOAA, EPA and the Gulf of Mexico Foundation. USACE will participate through the Coastal America Partnership in which it is a member. MS will provide in-kind support. Louisiana will proved in-kind support.
8. Develop a Gulf Regional Sediment Management Master Plan to enable more effective use of dredged material, such as sand, to protect and restore important and vulnerable resources and habitats. Involve state, local, and federal representatives in the planning process.	USACE, USGS	USFWS	Louisiana, Mississippi, EPA, NOAA	USACE: The need for more strategic indentification of sediment needs and sediment sources been identified as critical to increasing the safety of Gulf communities and for implementing ecosystem restoration. Work on this masterplan can be initiated though the GOMEXRSMi, to enhance ongoing coordination and initiate scoping to develop a master plan. Additional funding is needed to effectively proceed with masterplan development across the region. Involvement of other federal and state agencies, as well as other stakeholders will be important to accomplishing this action. USGS will assist in developing a comprehensive plan to identify and use available dreged materials, such as sand and gravel resources. USFWS will provide technical advice in the development of a comprehensicve plan to identify and use available dredged materials such as sand and gravel resources. EPA will provide ongoing technical support to the action lead(s) by way of its representation on the Regional Sediment Management Councils. NOAA will ensure that the Gulf State coastal management programs are fully integrated into this effort and that current sub-regional efforts (e.g., with the USACE Mobile District) are incorporated (Lead: NOS OCRM, NMFS SER HP) MS will provide in-kind support. Louisiana will proved in-kind support.

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9. Provide current statistics on population growth to help states determine conservation actions.	Identification of Lead still pending	NOAA		Provide NOAA Coastal Population Trends Report and STICS website overview to Alliance (Lead: NOS SP, NOAA CSC, NOEP)
R-2: Increase the safety of Gulf communities by better understanding the risks of localized sea level rise, storm surge, and subsidence				
36-Month Outcome: • Develop a prototype decision-support tool that allows Gulf resource managers to integrate storm surge, sea level rise, and subsidence information for at least one pilot area on the Gulf Coast. • Develop a pilot Community Resiliency Index for Gulf coastal communities.				
Action Blueprint:				
1. Enhance the coast-wide network of elevation benchmarks, including the Continuously Operating Reference System (CORS), to deliver subsidence rates accurate to 1 millimeter per year.	Louisiana Spatial Reference Center at LSU	NOAA	Florida, Mississippi, USACE, EPA	NOAA will provide funding to the Louisiana Spatial Reference Center at LSU to enhance the coastwide network of elevation benchmarks, including the CORS (Lead: NOS NGS) Several of the Gulf USACE districts may be able to contribute to this effort, as relevant to Corps studies and projects. EPA will collaborate with the action lead(s) to help integrate the Agency's data and information resources into the overall design of this action. MS will provide in-kind support. FL NERR sites will continue active participation in the CORS. The Louisiana Spatial Reference Center at LSU will coordinate with NOAA on this action.

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2. Obtain information on projected relative sea level rise, subsidence, and storm vulnerability to help prioritize conservation projects, including restoration, enhancement, and acquisition.	USGS	NOAA, USACE	Louisiana, Mississippi, USFWS, EPA	USGS will provide relevant information, technical advice and recommendations. NOAA will provide web based data on relative sea level trends and analyses tools for Gulf Coast National Water Level Observation Network Stations with over 25 years of data. NOAA will also provide frequency and duration of inundation analyses on existing NWLON stations. (Lead: NOS CO-OPS, EGT Habitat Program) USACE (New Orleans District) will be collecting this data and can share it; other districts may also be able to contribute information. USFWS will make available data from the National Wetlands Inventory and contribute technical advice and recommendations to this effort. EPA will collaborate with the action lead(s) to help integrate the Agency's data and information resources into the overall design of this action. Additionally, EPA's representative to the CWPPRA Task Force will submit a proposal through the program's annual solicitation process to potentially help further support this action. MS will provide in-kind support. LA will provide in-kind support.
3. Develop and apply ecosystem models to forecast the habitat structure and succession following hurricane disturbance and changes in ecological functions and services that impact vital socioeconomic aspects of coastal systems.	USGS	USACE	USFWS, EPA, NSF, Louisiana, Mississippi	USGS will provide technical advice and oversight on the development and application of ecosystem models. The USACE Science and Technology Workgroup for the LCA can contribute to this, and other districts may also be able to contribute. NSF could fund model development, but the agency's ability to support proposed research and studies is dependent on the submission of proposals and peer review of those proposals. USFWS will provide technical advice in the development of ecosystems models. EPA will provide collaborative support to the action lead(s) by way of providing strategic data and information access and support relative to EPA monitoring programs and that have the potential to apply value to this action. MS will provide in-kind support. LA will provide in-kind support.
4. Develop a management tool that enhances resiliency of Gulf Coast communities to storm surge and flooding through improved data, models, tools, and methodologies for at least one pilot study area in the Gulf region, including the Pensacola, Florida, area.	NOAA	Florida, USACE	Louisiana	NOAA will develop a model and decision support tools for more accurate storm surge and coastal flood forecasting building on enhanced observations, topograph and bathymetric data collection, vertical datum transformation, and ecological and societal analysis. (Lead NOAA CSC) FL will help coordinate the development of an improved storm surge model for the Pensacola, Florida, area. USACE and USGS are collaborating on developing coastal vulnerability maps based on lidar data collected through the USACE National Coastal Mapping Program. These standarized maps and LIDAR data are available to support this action. LA will provide in-kind support.

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ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
5. Develop an inventory of existing NOAA storm surge and other storm related products and services that includes data and observations, models, tools, and outreach and education activities over different time scales.	NOAA		Louisiana	NOAA will provide staff to develop an on-line searchable database of NOAA storm surge and other storm related products and services that will be consistent with existing NOAA Coastal Storm Program products and services. (Lead: NOAA CSC) LA will provide in-kind support.
6. Inventory and integrate topographic and bathymetric data for improved storm surge and inundation modeling for one or more pilot areas in the Gulf region.	NOAA	USGS, USACE	Lousiana	NOAA will develop an inventory of the topographic and bathymetric data available in the Gulf of Mexico suitable for use in storm surge and inundation modeling, evaluate the techniques of developing an integrated seamless topo/bathy surface, and develop an integrated topo/bathy product for a pilot area in Florida. (Lead: NOAA CSC) USACE can provide LIDAR and coastal mapping data to NOAA under USACE National Coastal Mapping Program. LA will provide in-kind support.
7. Determine how to enhance coastal communities resilience to disaster and begin to identify a methodolog for the development of a resilliency index.	NOAA		Louisiana, University of Colorado Natural Hazards Center, USGS, FEMA	NOAA will host a session at the 2006 Annual Hazards Research and Applications Workshop that defines disaster resilient communities and develops a plan for a resiliency index for the Gulf of Mexico Coast. (Lead: NOAA CSC) LA will provide in-kind support.
8. Coordinate, as appropriate, unified five Gulf State support for the collection of comprehensive shallow water bathymetry data (e.g., LIDAR) to support improved storm surge modeling and more accurate emergency evacuation assessments.	Identification of Lead still pending	USACE	Lousiana	USACE can contribute topo / bathy data, collected once every 4 years around the US, including Gulf of Mexico, through the National Coastal Mapping Program. LA will provide in-kind support.

• LEADS are responsible for accomplishing the activity
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EDUCATION				
ACTION	**LEAD**	**CONTRIBUTOR**	**COLLABORATOR**	**WHAT WILL YOU DO / DELIVER?**
ED-1: Galvanize local communities to protect their Gulf of Mexico through targeted education				
36-Month Outcomes: • Convene a bi-national Gulf of Mexico Alliance Environmental Education and Outreach Network, with dedicated staff, to (1) coordinate educational and outreach activities that address Alliance priority issues, and (2) establish effective methods to disseminate materials and programs throughout Gulf coastal communities. • Expand the existing Coastal Ecosystem Learning Center network so that one facility exists in each of the five U.S. Gulf States and the Mexican Gulf State of Veracruz. • Develop an environmental education pilot program targeted towards under-represented and under-served communities in the Gulf region.				
Action Blueprint:				
1. Hold a series of Community Workshops, at least one in each Gulf State, to solicit citizen input into Alliance priorities and actions. These workshop will be held at Network member sites on a periodic basis.	Alabama, Florida, Louisiana, Mississippi, Texas			AL will host a Community Workshop. FL will host a Community Workshop. (Lead: FDEP CAMA) LA will host a Community Workshop. MS will host a Community Workshop. TX will host a Community Workshop.

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
2. Hire a Network Coordinator for a term of at least 3 years, who will serve as staff to the Network, facilitate Alliance communications, and coordinate regional education and outreach activities.	Alabama, NOAA	EPA	Louisiana	AL will house the Coordinator at Dauphin Island Sea Lab, with the expectation that NOAA and EPA will provide funding for the Coordinator's salary. NOAA will provide funding to pay salary and benefits for the Network Coordinator for two years ($100,000 each in FY06 and FY07), to be hosted by the State of Alabama at the Dauphin Island Sea Lab (DISL). The Network Coordinator will dual report to John Dindo (Asst. Dir. of DISL/Dir. of Education) and Sharon Walker (Assistant Director for Outreach at the Gulf Coast Research Lab, MS) and will be responsible for creating and sustaining a gulf-wide education network that will collaborate on Alliance-focused education and outreach efforts. The Coordinator w be responsible for initiating ed/outreach pilot programs, planning and implementing a public awareness campaign, establishing a web-based education clearinghouse, and obtaining additional funding to sustain the position and provide programmatic funding beyond FY07. (Lead: NOAA OEd) EPA, working through NOAA as the Action Lead, will contribute resource assistance to help support the placement of a Network Coordinator. EPA's intent, based on funds availability, will be to contribute support to this action throughout the entirety of the 36 month performance period of this plan. In addition to funds availability, EPA's multi-year resource commitment will be contingent on a satisfactory joint annual performance review by all funding partners and the Alliance's State leads. LA will commit to working with the Network Coordinator.
3. Formalize Network membership by making formal invitations to join the *Gulf of Mexico Alliance Environmental Education and Outreach Network* and send a representative to the planning workshop described in Step #3.	Network Coordinator	NOAA, Florida	Louisiana	The position description for the Network Coordinator will require working with the five Gulf States to provide formal invitations to join the Network for appropriate Gulf region representatives. Network membership should include (but is not limited to) National Estuarine Research Reserves (NERRs), National Estuary Programs (NEPs), Centers for Ocean Science Education Excellence (COSEEs), Coastal Ecosystem Learning Centers (CELCs), state and national parks, state and national wildlife refuges, marine laboratories, aquaria, Sea Grant colleges, key state and federal agencies, and NGOs. Appropriate Mexican Gulf State representatives should also be invited to join the Network. NOAA will assist the Network Coordinator and other partners to determine membership in the Network and make invitations to the initial Network workshop. (Lead: NOS SP) FL will coordinate state participation. (Lead: FDEP Office of Environmental Education and CAMA). LA will participate as resources will allow.

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
4. Host a planning workshop of the newly established Network at the Rookery Bay NERR to review priority goals, actions and funding needs in Gulf coast education and outreach, and build an effective communications strategy for the Alliance. The workshop will culminate in the formulation of a strategic plan that will guide the initial activities of the Network.	Florida, Network Coordinator	EPA, NOAA	Louisiana, USACE, NPS, NSF, USGS	FL will plan, coordinate, and host a 3-day planning workshop of the Network at the Rookery Bay NERR. (Lead: FDEP and RB NERR) The position description for the Network Coordinator will require planning and coordinating an initial workshop of the Network. EPA, working in collaboration with NOAA as the Action Lead, will contribute funds and administrative assistance to help implement this workshop. If requested, NOAA will provide coordination/facilitation assistance to Rookery Bay NERR and the State of Florida for the initial 3-day Network workshop. (Lead: NOS SP) If requested by the Alliance, NOAA will serve on the Network. (Lead: NOS SP and NOAA OEd) USACE will participate in the workshop to provide Corps input to strategic plan, and to examine potential relevance of USACE study communication plans contributions to this strategy. NSF will send representative to workshop. USGS and NPS will participate at workshop. LA will participate as resources will allow.
5. In accordance with the U.S. Ocean Action Plan, establish a Coastal Ecosystem Learning Center (CELC) in each of the five Gulf States and in one Mexican State that borders the Gulf.	EPA	USFWS	Lousiana	EPA, as co-lead of the Coastal America's Gulf of Mexico Regional Implementation Team, will assume responsibility for working with Mississippi, Louisana, and Veracruz, Mexico, to identify and support the establishment of a CELC in each of the target states. USFWS will assist in the expansion of CELCs that support the Gulf of Mexico Basin--including the new Georgia Aquarium. State Department will facilitate, as appropriate, contacts with Mexican federal and state officials to explore their interest in participating in project activities, according to guidance of the Alliance. LA will participate as resources will allow.
6. Develop and host a pilot program to engage underrepresented and underserved communities in Gulf stewardship activities related to the Alliance strategic priorities.	Louisiana, Barataria-Terrebonne National Estuary Program	EPA, Florida		BTNEP will plan and host a pilot program to build awareness about the Gulf of Mexico among underrepresented and underserved populations. LA will work with BTNEP to implement this action as resources allow. EPA will work through the Agency's existing programs supporting the Gulf's National Estuary Programs (NEPs) (i.e., and the Ocean and Coastal Protection Division and the Gulf of Mexico Program) to help assist the BTNEP in carrying out this action. FL will provide information about the state's LIFE program to see if it can serve as a model for this pilot program and if activities can be enhanced through new Gulf partnerships. (Lead: FDEP Office of Environmental Education and CAMA)

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ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
7. Design and host a Web site to support education an outreach efforts of the Network, including an electronic clearinghouse to disseminate effective Gulf coast related educational information and materials via the Internet.	Network Coordinator	NOAA	Louisiana, EPA, NPS, NSF, USGS	The position description for the Network Coordinator will require coordinating a Gulf region education Web site and clearinghouse, as directed by the Network. EPA will provide contributory support through the co-operative funding assistance provided to secure the Network Coordinator in Action 1 above. NSF will provide information on NSF-funded activities. USGS and NPS will coordinate its existing outreach and eduational activities with the Gulf partners. If requested, NOAA will provide in-kind technical support to the Network Coordinator and the State of Florida in the establishment of the Web site and electronic clearinghouse (Lead: NOS SP). LA will coordinate with Network Coordinator to support website.
ED-2: Conduct a public awareness campaign for the Gulf of Mexico				
36-Month Outcome: Develop and implement a comprehensive, 36-month (minimum) public awareness campaign to promote stewardship messages associated with the other four Alliance priority issues and community hurricane preparedness.				
Action Blueprint:				
1. Design and conduct a strategic public awareness campaign that will encourage Gulf stewardship and coastal hazard identification and prevention.	Network Coordinator	EPA	Louisiana, NPS, USFWS	The position description for the Network Coordinator will require, as associated resources allow, issuing a contract to an appropriate public relations company to design and conduct the public awareness campaign. EPA will contribute resource assistance to help support this action. USFWS and NPS will provide technical assistance and information in support of this effort. LA will support the Network Coordinator on a public awareness campaign.

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
2. Identify funding sources to sustain the public awareness campaign in the short-term (within 36 months) and long-term (after 36 months).	Network Coordinator	EPA	Louisiana, NASA	The position description for the Network Coordinator will require an allocation of time to researching and securing funds or other resources to continue the public awareness campaign. EPA's intent, based on funds availability, will be to contribute support to this action throughout the entirety of the 36 month performance period of this plan. In addition to funds availability, EPA's multi-year resource commitment will be contingent on a satisfactory joint annual performance review by all funding partners and the Alliance's State leads. NASA will provide information on potential funding opportunities that organizations and institutions may respond to, as appropriate, to support the “Campaign for the Gulf of Mexico." LA will coordinate with the Network Coordinator as resources will allow.

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HABITAT IDENTIFICATION AND CHARACTERIZATION

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
ID-1: Create and provide access to interactive habitat maps for priority Gulf of Mexico habitats				
36-Month Outcome: • Produce a prototype Web portal to provide public access to and delivery of current and historic state, federal, and local Gulf of Mexico habitat data, with the initial focus on sea grass beds. Users will be able to search a digital library for habitat information by keyword or geographic location, preview geospatial data, and download selected data products. The portal will also demonstrate the feasibility of building a distributed system that will enable users to request and retrieve data directly from the agencies holding the original data.				
Action Blueprint:				
1. Coordinate federal and state collection of information and complete an inventory of existing habitat data and initiate a gap analysis. This inventory will identify available data and associated metadata. The inventory will have both a regional and local scope and will focus on mapping and restoration projects. Products will include: (a) User Needs Assessment; (b) Inventory of Gulf of Mexico Habitat Data; and (c) Assessment of Priority Gulf of Mexico Habitat Data Needs.	Identification of Lead still pending	Alabama, Florida, Louisiana, Mississippi, Texas, NOAA, USGS, NASA, EPA	MMS, NPS	NOAA will facilitate participation of the Gulf State Coastal Management Programs, which have primary responsibility for protection, restoration, and mitigating the loss of coastal wetlands. (Lead: NOS OCRM) NOAA will provide sea grass maps for the Texas bend area derived from recent digital aerial photography (Lead: NOAA CSC) and additional data layers (Lead: NESDIS NCDDC). NOAA will provide assistance or training on needs assessment, if asked by the Alliance (Lead: NOAA CSC) USGS will coordinate by supplying existing databases, metadata, maps, and images. NPS will provide existing data and other available information. NASA will inventory its existing remotely sensed data and assets for use in habitat mapping. EPA will support the action lead(s) by ensuring EPA's data management programs (e.g., EMAP and STORET) are properly accounted for and included in this action. Additionally, EPA will actively explore internal funding opportunities to assist NOAA in the development and update of the coastal Environmental Sensitivity Index Maps for the Gulf region. AL will provide state habitat data, and associated metadata, to the inventory. FL will coordinate state participation in coordination efforts and inventory development. (Lead: Florida Fish and Wildlife Conservation Commission) LA will provide state habitat data, and associated metadata, to the inventory. MS will provide state habitat data, and associated metadata, to the inventory. TX will provide state habitat data, and associated metadata, to the inventory. MMS funded development of the G-WIS in the late 1990s which created maps of habitats along the Gulf Coast. These maps are outdated, but form a foundation for creation of interactive habitat maps.

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ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
2. Establish the Federal Data Management Group (FDMG), a team to work with state, local, and federal entities to identify specific requirements for a regional data management platform and portal.	NOAA, USGS, USACE	EPA	Florida, NPS, USFWS	NOAA will serve as a co-chair, along with USGS and USACE, of the FDMG, and provide staff assistance to the group's activities. (Lead: NOAA CSC, with support from NOS SP and NCDDC) USACE will co-lead the FDMG and help identify requirements for regional data management. This will include a pilot system linking NOAA/USGS/USACE data with documentation on how to expand it to other participants (see Step #4). USGS will also co-lead this effort. USFWS and NPS will cooperate and provide technical advice to this effort. EPA will assist the action lead(s) in identifying the requirements for a regional data management platform and supporting portal by providing resource and facilitation support for a regional state and federal technical workshop. FL will coordinate state participation in FDMG activities. (Lead: Florida Fish and Wildlife Conservation Commission)
3. Establish a standard metadata format to streamline metadata development and maintenance at the state, local, and federal level.	Identification of Lead still pending	USGS, EPA	USFWS, NPS, NOAA, Florida	USGS will help promote FGDC metadata standards and will make metadata traini available. USFWS and NPS will collaborate with other agencies on this venture. EPA will assist the action lead(s) in establishing and implementing the associated delivery of metadata training and tech support. NOAA will provide guidance on the use of metadata standards for data documentation and maintenance. (Lead: NOAA CSC, NESDIS NCDDC) FL will coordinate state participation in the development of a standard metadata format. (Lead: Florida Fish and Wildlife Conservation Commission)
4. Establish a data management platform and portal that will provide access and delivery of existing state, local, and federal data.	Identification of Lead still pending	USGS, USACE, NOAA	USFWS, EPA, Florida	USACE will continue USACE-wide implementation of existing federal & USACE policy & guidance for spatial data & eGIS to ensure USACE data are available. TI Corps will also continue development of the USACE National Coastal Databank a contribute to development of a pilot system for GoMex Alliance use. Within existing funds, USGS will continue to collaborate with partners in developing and expanding the existing USGS Gulf Data and Information Management System. NOAA will offer the Ocean Planning Information System (OPIS) as a framework for the portal. (Lead: NOAA CSC) USFWS will provide access to existing digital maps under the National Wetlands Inventory and some analytical expertise. EPA will work, in cooperation with the action lead(s), to coordinate the integration of the Agency's environmental monitoring systems in support of the implementation of the regional data management platform targeted in this action. FL will coordinate state participation in the development of data management platform and portal. (Lead: Florida Fish and Wildlife Conservation Commission)

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ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
5. Provide data management training, software, and hardware acquisition to Gulf state agencies.	Identification of Lead still pending		Louisiana, EPA	EPA will work with the action lead(s), in cooperation with the Agency's state agency programs implementation partners, to identify the current technology (hardware, software, and telecommunications) and training gaps that would impede the delive of the proposed system. LA will participate in training courses and will use data management hardware and software as staff time will allow.
6. Provide GIS and metadata training to the state and local Gulf States resource managers.	NOAA	Florida, USACE, USGS, EPA	Louisiana	NOAA will provide training on the use of metadata standards for data documentation and maintenance. NOAA will provide "GIS for your Organization" and "Coastal Applications of GIS" training classes to the Gulf States and partners. (Lead: NOAA CSC) FL NERRs Coastal Training Program will host GIS training classes. (Lead: FDEP CAMA) USACE will contribute by providing eCoastal & National Coastal Databank training to USACE and Project Sponsors to facilitate Gulf-wide use capability. USGS will help promote FGDC metadata standards and will make metadata traini available. EPA will assist the action lead(s) in establishing and implementing the associated delivery of GIS and metadata training and tech support by co-supporting the facilitation and implementation of a regional training workshop. LA will attend training courses as staff time will allow.
7. Evaluate the types of technologies and procedures needed to map Gulf of Mexico seafloor habitats and establish a baseline information and mapping system.	Identification of Lead still pending	NOAA	Louisiana	NOAA will evaluate the currently-underway Southern Florida Coral Ecosystem Mapping Project as a demonstration of the potential challenges involved in the identification and assessment of the locations, extent, variation, and condition of coastal, nearshore, and offshore Gulf of Mexico seafloor habitats. (Lead: NOS SP) LA will participate as resources will allow.

NUTRIENT REDUCTION

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
N-1 Increase regional coordination in the development of nutrient criteria				
36-Month Outcome: • Establish a Gulf of Mexico Alliance Nutrient Criteria Coordination Team of state and federal representatives to meet the needs of the Gulf States through improved coordination among existing local, state, regional, and national nutrient reduction programs.				
Action Blueprint:				
1. Convene the Coordination Team and a technical conference to synthesize the state of knowledge regarding nutrient levels and develop a plan for regional coordination.	Mississippi, EPA	Alabama, Florida, Louisiana, Texas	NOAA, USGS, USFWS, NSF	MS will provide support and host or co-host the initial conference. EPA, in support of the State lead, will assume the responsibility for convening the Coordination Team and implementing the conference outlined in this action. NOAA will serve as a member on the Nutrient Criteria Coordination Team, if asked by the Alliance (Lead: NOS NCCOS) NOAA will assist the Gulf State Coastal Nonpoint Program coordinators in participating in the Coordination Team (Lead: NOS OCRM) USGS will participate on the Coordination Team. USFWS will participate in the development of the plan for regional coordination through the Gulf of Mexico Program. NSF will send a representative to the conference. AL will participate as resources allow. FL will participate as resources allow. LA will participate as resources allow. TX will participate as resources allow.
2. Complete and transfer knowledge gained from the Northern Gulf Estuarine Pilot Project and identify one or more estuaries to apply the methods and lessons learned from the Northern Gulf Estuarine Pilot Project.	EPA	Louisiana, Mississippi		EPA will assume the responsibility for establishing and implementing a regional communications plan for this action. At the direction of the State lead(s), EPA will help facilitate the identification of at least three targeted estuaries (one in each of the northern Gulf States) for trial application of the lessons learned through the course of this study. Additionally, EPA will develop and submit, on behalf of the Gulf States, a Regional Applied Research Effort (RARE) proposal in attempt to he further implement this methodology. MS will use the knowledge gained to apply to a MS estuary. LA will participate as resources will allow.

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NUTRIENT REDUCTION				
ACTION	**LEAD**	**CONTRIBUTOR**	**COLLABORATOR**	**WHAT WILL YOU DO / DELIVER?**
3. Identify and coordinate federal, state, and local monitoring efforts and data management systems to support development of nutrient criteria.	Identification of Lead still pending	Louisiana, Mississippi	EPA, USGS, NOAA	MS will provide in-kind support. EPA will coordinate with state monitoring and data management programs to help support this action. USGS will collaborate in coordinating monitoring efforts and information management. NOAA will provide coordination and technical support (Lead: NESDIS NCDDC) LA will participate as resources will allow.
4. Present a comprehensive assessment of Gulf nutrient monitoring program needs to the National Wate Quality Design Team.	EPA	Louisiana, Mississippi	USGS	EPA will assume a co-lead responsibility, with the Alliance's state lead, to conduct the regional assessment and present the findings and recommendations to the National Water Quality Design Team. MS will send staff to participate. USGS will participate in the assessment. LA will participate as resources will allow.
5. Inventory modeling needs to deal with nutrient issues under permitting, TMDL development, and nutrient criteria development.	Identification of Lead still pending.	Louisiana, Mississippi	EPA, USACE, USGS, NOAA	MS will provide in-kind support. EPA will provide technical guidance and direction on how to address TMDL and Water Quality Standards (WQS) development. Additionally, EPA will help facilitate the completion of the modeling inventory action. USACE will contribute input to this inventory from the recent Mississippi River Modeling Assessment Forum (July 05), and any follow-on efforts. USGS will assist in identifying appropriate modeling techniques. NOAA will support this action (Lead: NESDIS NCDDC) LA will participate as resources will allow.
6. Develop a library/database of marine and estuarine species for site specific D.O. criteria development.	EPA			EPA will assume the responsibility for developing this database action.
N-2: Implement nutrient reduction activities during Gulf recovery and rebuilding				
36-Month Outcome: • Implement nutrient prevention and reduction activities in Gulf communities improving or rebuilding infrastructure.				
Action Blueprint:				

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NUTRIENT REDUCTION

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
1. Identify key coastal watersheds with significant nutrient impacts, sensitive waters, and a high likelihood of successful restoration of fishing and recreational uses.	Identification of Lead still pending.	Louisiana, Mississippi, USGS, USFWS, NOAA	EPA	USGS will contribute to a coastal watershed assessment. USFWS will provide technical support to a coastal watershed assessment. NOAA will cull this information out of the Estuarine Eutrophicaton Assessment update due out Dec. 2005 and provide it to the Alliance. (Lead: NOS NCCOS) MS will provide funding and in-kind support. EPA will support and assist the Nutrient Coordination Team in the assessment and identification actions outlined, with particular emphasis on the Gulf States' 303(d) listed waters embedded in the priority coastal watersheds. LA will lead this action within Louisiana.
2. Identify communities conducting infrastructure rebuilding activities where nutrient reduction can be achieved through improved infrastructure planning and design.	Identification of Lead still pending.	Louisiana, Mississippi, EPA	NOAA	In support of the identification and assessment, EPA will provide listings of those Gulf States funded DWSRF and CWSRF projects. Additionally, EPA will provide listings of the Gulf States SPAPs as they relate to their coastal zones. MS will provide funding and in-kind support. NOAA will facilitate the involvement of appropriate state personnel (coastal managers and Coastal Nonpoint Program Coordinators) and provide policy advice and guidance directly and through other federal partners (such as EPA's Office of Water and the Smart Growth Program). (Lead: NOS OCRM) LA will participate as resources will allow.
3. Identify and prioritize implementation and coordination opportunities for existing federal, state, and local programs in key coastal watersheds and communities conducting infrastructure rebuilding activities.	Identification of Lead still pending.	NOAA, USGS, USFWS, EPA, Louisiana, Mississippi		Working through Sea Grant, NOAA will extend the Nonpoint Education for Municipal Officials (NEMO) program throughout the Gulf of Mexico, specifically using the Nonpoint Source Pollution and Erosion Comparison Tool (N-SPECT), and the Impervious Surface Analysis Tool (ISAT) (Lead: NOAA CSC, an EGT07 action) If asked by Gulf States, NOAA will revise funding guidance to direct federal resources to nutrient issues in priority watersheds identified by the states. (Lead: NOS OCRM) USGS and USFWS will assist in identifying and prioritizing watershed enhancement opportunities. In support of the identification and assessment, EPA will provide listings of those Gulf States funded DWSRF and CWSRF projects. Additionally, EPA will provide listings of the Gulf States SPAPs as they relate to their coastal zones. MS will provide funding and in-kind support. LA will participate as resources will allow.

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NUTRIENT REDUCTION

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
4. Provide technical assistance to interested local governments to improve infrastructure planning and design.	Identification of Lead still pending.	EPA, NOAA, USFWS, Louisiana, Mississippi		In support of the identification and assessment, EPA will provide listings of those Gulf States funded DWSRF and CWSRF projects. Additionally, EPA will provide listings of the Gulf States SPAPs as they relate to their coastal zones. NOAA will provide initial Coastal Change Analysis Program (C-CAP) land cover data set for the Gulf of Mexico, contracted to be delivered at the end of FY06 (Lead: NOAA CSC, an EGT07 action, and NOS OCRM) USFWS will provide technical assistance to local governments seeking to improve infrastructure planning and design. MS will provide funding and in-kind support. LA will participate as resources will allow.
5. Evaluate the effectiveness of nutrient reduction activities in key coastal watersheds and rebuilding communities and develop techniques to improve effectiveness.	Identification of Lead still pending.	USGS, EPA, Louisiana, Mississippi		USGS will help define objective analyses and measures of the nutrient reduction success. EPA will support and assist the Nutrient Coordination Team in assessing the effectiveness of current nutrient reduction actions and will provide technical assistance in the development and pilot implementation of improved techniques. MS will provide funding and in-kind support. LA will participate as resources will allow.
6. Map communities served by advanced wastewater treatment systems to help develop strategies for remediation activities.	EPA	NOAA, Louisiana, Mississippi	USACE	EPA will assume the responsibility for this mapping action. NOAA will provide their version of these data to the Alliance (Lead: NOS SP) MS will provide in-kind support. USACE will help integrate this information into the collaborative data management / GIS efforts discussed under the Action ID-1. LA will participate as resources will allow.

N-3: Assert an aligned, five Gulf State position on the need to address Gulf of Mexico hypoxia

36-Month Outcome:

• Develop and represent a consistent five Gulf State position on the need to reduce Gulf hypoxia, in venues such as the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force.

Action Blueprint:

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NUTRIENT REDUCTION

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
1. Assist in the completion of a comprehensive assessment of the Gulf Hypoxia Action Plan.	Louisiana, Mississippi	NOAA, EPA	USGS, USFWS, MMS, NSF	NOAA is represented on the Mississippi River/Gulf of Mexico Watershed Nutrien Task Force, the Task Force Coordination Committee, the Science Reassessment Team responsible for collating a bibliographical resource for the Science Advisory Board involved in the Gulf Hypoxia Action Plan assessment, the Monitoring, Modeling, and Research Workgroup which coordinates the Science Reassessment Team, and the Steering Committee for the Gulf of Mexico Hypoxia Symposium. (Lead NOS NCCOS) As Chair of the Mississippi River / Gulf of Mexico Hypoxia Task Force and, in cooperation with its many federal partners on the Task Force, EPA will provide broad support (technical and administrative) to the completion of the scheduled assessment of the Gulf Hypoxia Action Plan. MS and LA, as members of the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, will advise the other Gulf states on the status of the Gulf Hypoxia Action Plan. USGS and FWS will help implement actions to achieve desired outcomes. MMS has information to contribute to this issue.
2. Help bring focus and expertise to the Gulf region by assisting with the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force Sub-basin Committee Symposium and the Gulf of Mexico Hypoxia Symposium (spring 2006).	Louisiana, Mississippi	NOAA, USACE, EPA	USGS, USFWS, MMS, NSF	NOAA is co-sponsoring a Gulf of Mexico Hypoxia Symposium workshop in spring 2006 to evaluate the current scientific understanding of factors influencing hypoxia in the Gulf of Mexico, and to assess the appropriateness of models used to guide management activities for reducing hypoxia in the region. The meeting is part of t adaptive management strategy of the 2001 Action Plan for Reducing, Mitigating a Controlling Hypoxia in the Northern Gulf of Mexico. Proceedings papers will be distributed to an expert panel of the Science Advisory Board of EPA as a resource for their evaluation of management strategies. (Lead NOS NCCOS) USACE will partner with the EPA in sponsoring the Lower Basin Symposium; and partner with the USGS in sponsoring the Sources, Fate & Transport Symposium. EPA will co-sponsor and provide technical support to both the Lower MS River Sub-basin Committee and Gulf Science Symposia. MS and LA, as members of the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force, will advise the other Gulf States on the status of the Gulf Hypoxia Action Plan. USGS and FWS will help implement actions to achieve desired outcomes. MMS has information to contribute to this issue. NSF will send a representative to symposia on current science of Gulf hypoxia.

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NUTRIENT REDUCTION

ACTION	LEAD	CONTRIBUTOR	COLLABORATOR	WHAT WILL YOU DO / DELIVER?
3. Provide Gulf State information on point and non-point source pollution to the Mississippi River Basin and the ecological and economic impacts of the Gulf of Mexico Hypoxic Zone on natural resources such as fish and shellfish.	Identification of Lead still pending.	NOAA, EPA, Mississippi	USGS, USFWS	Through the Gulf of Mexico Ecosystems and Hypoxia Assessment Program (NGOMEX), NOAA will support multi-year, interdisciplinary research projects to develop a fundamental understanding of the northern Gulf of Mexico ecosystem in the region affected by Mississippi River inputs with a focus on the causes and effects of the hypoxic zone over the Louisiana continental shelf and the prediction its future extent and impacts on ecologically and economically important species. The research program is directed towards the goal of developing a predictive capability for the Louisiana continental shelf ecosystem within an adaptive management framework that connects monitoring, data analysis, model predictions and management actions with continuous feedback for improvement in each category. This will allow for the assessment of alternative management strategies for Mississippi River nutrient loads within the context of long-term changes in eutrophication and hypoxia. (Lead: NOS NCCOS) EPA will provide the Gulf States partnership with available water quality monitoring and analysis data and information collected and/or administered by the Agency relevant to point and non-point source pollution to the Mississippi River Basin. Additionally, EPA will provide information and technical assistance in the use of CWSRF as an alternative financing strategy for NPS projects. MS will provide in-kind support. USGS and USFWS will help implement actions to achieve desired outcomes.
4. Establish effective Mississippi River Basin-wide agricultural partnerships to better facilitate strategic voluntary nutrient reductions.	Identification of Lead still pending.	EPA, Mississippi	USGS, USFWS	EPA will provide cooperative funding and technical assistance to the currently acti Mississippi River Sub-basin teams (i.e., Upper-MS, Lower-MS, and Ohio) to better facilitate voluntary nutrient reductions through strategic "producer partnership" initiatives. MS will provide in-kind support. USGS and USFWS will help implement actions to achieve desired outcomes.
5. Provide annual forecasts of the extent of the hypoxic zone to guide fishing industries and establish a basis fo evaluating the validity of hypoxic zone model prediction	Identification of Lead still pending.	NOAA		NOAA provides annual forecasts of the size of the hypoxic zone using a dissolved oxygen model driven by river nitrogen load. (Lead NOS NCCOS)